

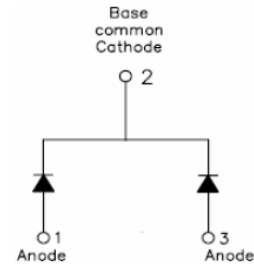
MBR4045CT SCHOTTKY RECTIFIER

Applications:

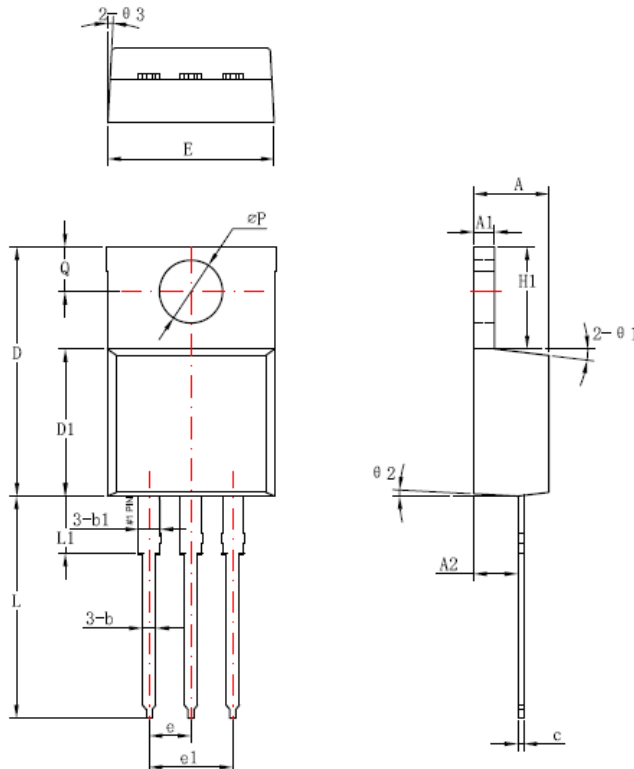
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

Features:

- 150 °C T_J operation
- Center tap configuration
- Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

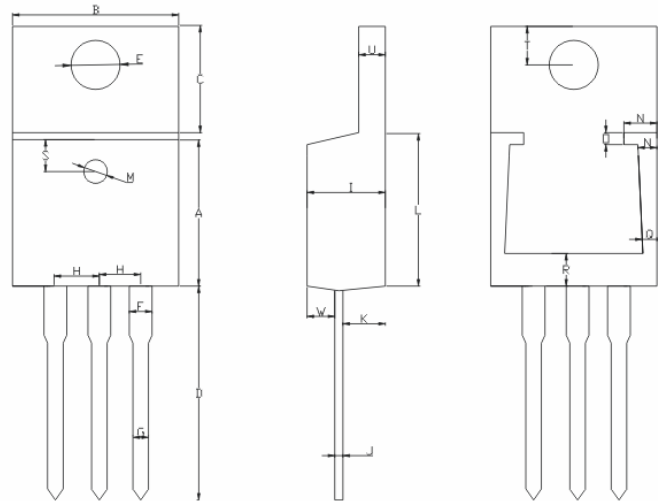


Mechanical Dimensions: In mm



Symbol	Dimensions in millimeters		
	Min	Typical	Max
A	4.42	4.57	4.72
A1	1.17	1.27	1.37
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
D	14.94	15.24	15.54
D1	8.85	9.00	9.15
E	10.01	10.16	10.31
e		2.54	
e1		5.06	
H1	6.04	6.24	6.44
L	12.7	13.56	13.78
L1		3.5	
ΦP	3.74	3.84	4.04
Q	2.54	2.74	2.94
θ1		7°	
θ2		3°	
θ3		4°	

OPTION 1(HD)



A: 8.5 ± 0.5	B: 9.5 ± 0.5	C: 6.4 ± 0.5	D: 14.1 ± 1
E: 3.84 ± 0.03	F: 1.27 ± 0.03	G: 0.85 ± 0.10	H: 2.54 ± 0.025
I: 4.6 ± 0.5	J: 0.38 ± 0.015	K: 2.75 ± 0.025	L: 9.0 ± 0.5
M: 1.5 ± 0.05	N: 1.8 ± 0.05	O: 0.5 ± 0.05	P: 1.2 ± 0.05
Q: 0.9 ± 0.05	R: 3.2 ± 0.05	S: 1.55 ± 0.05	T: 2.8 ± 0.15
U: 1.27 ± 0.05	W: 1.27 ± 0.03		

OPTION 2(SR)

TO-220AB

Technical Data
Data Sheet N0743, Rev. -
Marking Diagram:

Green Products



Where XXXXX is YYWWL

MBR = Device Type
40 = Forward Current (40A)
45 = Reverse Voltage (45V)
CT = Configuration
SSG = SSG
YY = Year
WW = Week
L = Lot Number

Cautions: Molding resin
Epoxy resin UL:94V-0

Ordering Information:

Device	Package	Shipping
MBR4045CT	TO-220AB (Pb-Free)	50pcs / tube

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Inverse Voltage	V_{RWM}	-	45	V
Max. Average Forward	$I_{F(AV)}$	@ $T_C = 118^\circ\text{C}$, Rated V_R	20(per leg)	A
			40(per device)	
Peak Repetitive Forward Current (per leg)	I_{FRM}	@ $T_C = 118^\circ\text{C}$, Rated V_R Square wave, 20kHz	40	A
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	I_{FSM}	8.3 ms, half Sine pulse	252	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg) *	V_{F1}	@ 20A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.60	V
		@ 40A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.78	
	V_{F2}	@ 20A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.58	V
		@ 40A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.75	
Max. Reverse Current (per leg) *	I_{R1}	@ $V_R = \text{rated } V_R$ $T_J = 25\text{ }^\circ\text{C}$	1	mA
	I_{R2}	@ $V_R = \text{rated } V_R$ $T_J = 100\text{ }^\circ\text{C}$	50	mA
	I_{R3}	@ $V_R = \text{rated } V_R$ $T_J = 125\text{ }^\circ\text{C}$	95	mA
Max. Junction Capacitance (per leg)	C_T	@ $V_R = 5\text{V}$, $T_C = 25\text{ }^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	900	pF
Typical Series Inductance (per leg)	L_S	Measured lead to lead 5 mm from package body	8.0	nH
Max. Voltage Rate of Change	dv/dt	-	10,000	V/ μs

* Pulse Width < 300 μs , Duty Cycle <2%

Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature Range	T_J	-	-55 to +150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-	-55 to +150	$^\circ\text{C}$
Maximum Thermal Resistance Junction to Case	$R_{\theta JC}$	DC operation	1.5	$^\circ\text{C/W}$
Maximum Thermal Resistance, Junction to Case(Per package)	$R_{\theta JC}$	DC operation	50	$^\circ\text{C/W}$
Maximum Thermal Resistance, Case to Heat Sink	$R_{\theta CS}$	Mounting surface, smooth and greased	0.50	$^\circ\text{C/W}$
Approximate Weight	wt	-	2	g
Case Style	TO-220AB			

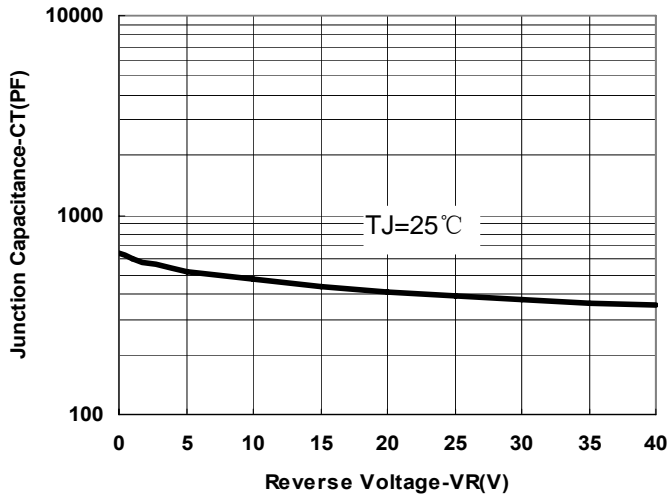


Fig.1-Typical Junction Capacitance

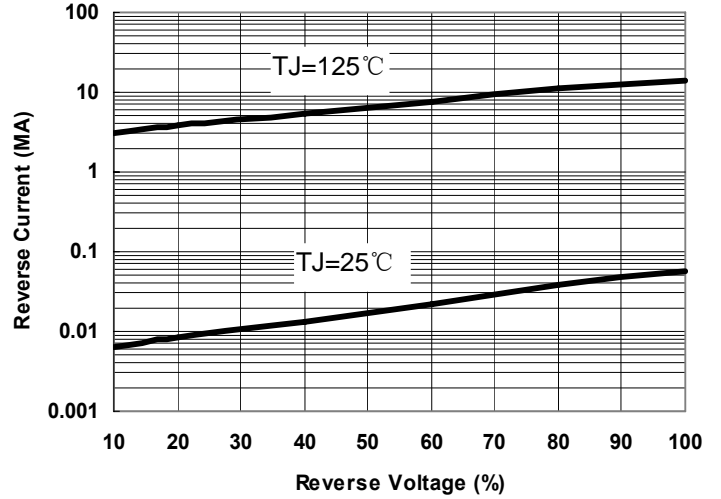


Fig.2-Typical Reverse Characteristics

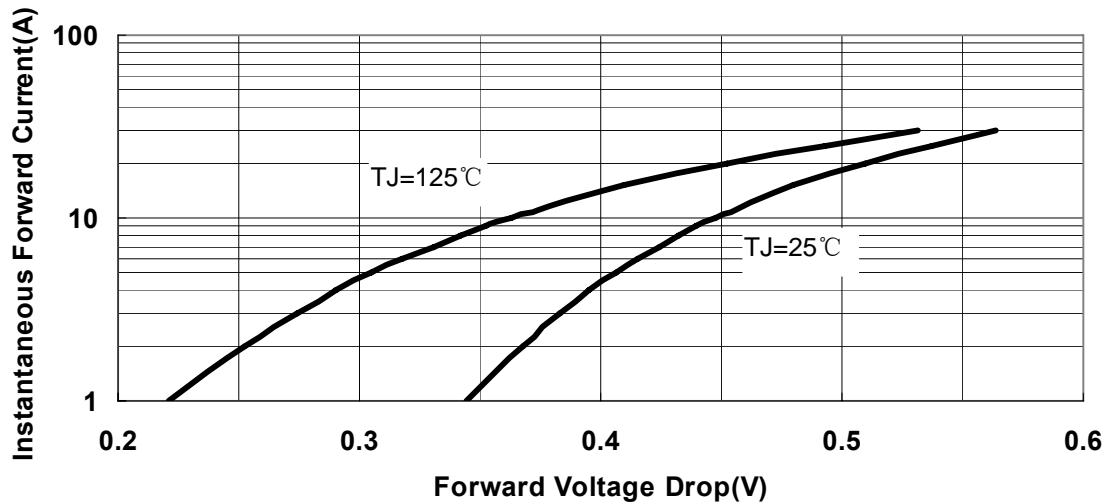


Fig.3-Typical Instantaneous Forward Voltage Characteristics

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